UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,432	05/08/2007	Tim Whittaker	US04 0113 US2	8745

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EXAMINER
BYRD JR., JOHN B

ART UNIT	PAPER NUMBER
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/588,432	WHITTAKER, TIM
	Examiner	Art Unit	
	JOHN B. BYRD JR.	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _25 March 2010_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-22_ is/are pending in the application.

  4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-22_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _04 August 2006_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

  a)☐ All   b)☐ Some * c)☐ None of:

    1.☐ Certified copies of the priority documents have been received.

    2.☐ Certified copies of the priority documents have been received in Application No. _____.

    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

  * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _2/23/2010, 8/04/2006_.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   The Applicant's arguments filed 25 March 2010 have been fully considered but

they are not persuasive. Applicant argues that the combined teachings of *Piercy et al*

and the *802.3af* standards fails to teach, or suggest "the present invention as recited in

independent claim 1, and similarly recited in independent claim 12 which, amongst other

patentable elements, recites (illustrative emphasis provided):

> providing to at least one pair of the first and second pairs of twisted wires a series of
> synchronization pulses generated from a synchronization source and capacitively-coupled to the
> said at least one pair of twisted wires so as to supply a **composite** signal that includes the
> series of **synchronization pulses and** at least one of the positive and negative D.C. voltage
> rails to a first end of said at least one pair of twisted wires.

The Examiner respectfully disagrees with such an assertion. *Piercy* discloses at

least one pair of the first and second pairs of twisted wires a series of synchronization

pulses generated from a synchronization source and capacitively-coupled to the said at

least one pair of twisted wires so as to supply a composite signal a composite signal

that includes the series of synchronization pulses to a first end of said at least one pair

of twisted wires, see par.[0015] and par.[0016], wherein the "timing signal" reads on

pulse generated, and also see par.[0003], which teaches the series of synchronization

via pulses. Piercy teaches "Unshielded Twisted Pair (UTP) cables" in par.[0013] which

reads on capacitively-coupled. *802.3af* teaches at least one of the positive and

negative D.C. voltage rails to a first end of said at least one pair of twisted wires, see

page 30, Endpoint PSE, Alternative B, wherein the two coupled pairs coming from the

PSE reads on the twisted positive and twisted negative pair, as further explained on page 31, Table 33-1 and 33.2.2.

Therefore, the teachings from the references read on the claimed limitations and the rejections are maintained as repeated below.

Claim Rejections - 35 USC § 103

2.   The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3.   Claims 1-3, 6-13, and 15-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Piercy et al* (2004/0042499 A1) (hereinafter *Piercy*) in view of the Institute of Electrical and Electronics Engineers Standards, 802.3af™ ,18 June 2003 (hereinafter 802.3af).

Regarding **claim 1**, *Piercy* discloses a method for synchronizing a timing of multiple fixed wireless Access Points and/or Synchronization Units in a network communicating under an Ethernet-related protocol, comprising the steps of:

(a) arranging a cable comprising at least four pairs of twisted wires connected between an Ethernet LAN and a plurality of fixed Access Points (AP) and/or Synchronization Units (SU) in a network (=see par.[0014], and Fig.1, items 4 and 5);

(c) providing to at least one pair of the first and second pairs of twisted wires a series of synchronization pulses generated from a synchronization source and capacitively-coupled to the said at least one pair of twisted wires so as to supply a

composite signal a composite signal that includes the series of synchronization pulses to a first end of said at least one pair of twisted wires (=see par.[0015] and par.[0016], wherein the "timing signal" reads on pulse generated; also see par.[0003], which teaches the series of synchronization via pulses);

but does not clearly teach: (b) assigning a first pair of the at least four pairs of twisted wire to carry a positive D.C. rail voltage to at least one (AP) or (SU), and assigning a second pair of the least four pairs of twisted wire to carry a negative D.C. rail voltage to said at least one (AP) or (SU); (c) a composite signal that includes the series of synchronization pulses and at least one of the positive and negative D.C. voltage rails to a first end of said at least one pair of twisted wires (d) reconstructing the generated synchronization pulses by detecting pulses on the positive and negative D.C. voltage rails at a second end of said at least one pair of twisted wires by said at least one (AP) or (SU).

However, in the same field of endeavor, the *802.3af* does teach:

(b) assigning a first pair of the at least four pairs of twisted wire to carry a positive D.C. rail voltage to at least one (AP) or (SU), and assigning a second pair of the least four pairs of twisted wire to carry a negative D.C. rail voltage to said at least one (AP) or (SU) (=see page 30, Endpoint PSE, Alternative B, wherein the two coupled pairs coming from the PSE reads on the twisted positive and twisted negative pair, as further explained on page 31, Table 33-1);

(c) at least one of the positive and negative D.C. voltage rails to a first end of said at least one pair of twisted wires (=see page 30, Endpoint PSE, Alternative B,

wherein the two coupled pairs coming from the PSE reads on the twisted positive and twisted negative pair, as further explained on page 31, Table 33-1 and 33.2.2);

(d) reconstructing the generated synchronization pulses by detecting pulses on the positive and negative D.C. voltage rails at a second end of said at least one pair of twisted wires by said at least one (AP) or (SU) (=see page 34, section 33.2.3.6; wherein the functions are described which teach the reading of the reconstruction of the reconstructed synchronization pulses).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to combine the teachings of *Piercy* and the *802.3af* to provide power over Ethernet cable without affecting the data.

Regarding **claim 2**, the combined teachings of *Piercy* and the *802.3af* discloses a method according to claim 1, and *802.3af* further teaches wherein each wire of the respective first and second pairs are connected together by one of a connector and a physical connection of the respective pair (=see Fig. 33-4, Endpoint PSE, Alternative B).

Regarding **claim 3**, the combined teachings of *Piercy* and the *802.3af* discloses a method according to claim 1, and *802.3af* further teaches wherein the LAN powering scheme comprises that described in one of draft standard IEEE P802.3AF (=see page 30, wherein the said standard is the disclosed prior art).

Regarding **claim 6**, the combined teachings of *Piercy* and the *802.3af* discloses a method according to claim 2, and *802.3af* further teaches further comprising connecting the cable to the (AP) or (SU) via an RJ-45 connector (=see page 31, Fig. 33-5).

Regarding **claim 7**, the combined teachings of *Piercy* and the *802.3af* discloses

a method according to claim 1, and *802.3af* further teaches wherein the positive D.C.

rail voltage is applied to pins 4 and 5 of the RJ-45 connector (=see Table 33-1,

Alternative B).

Regarding **claim 8**, the combined teachings of *Piercy* and the *802.3af* discloses

a method according to claim 1, and *802.3af* further teaches wherein the negative D.C.

rail voltage is applied to pins 7 and 8 of the RJ-45 connector (=see Table 33-1,

Alternative B).

Regarding **claim 9**, the combined teachings of *Piercy* and the *802.3af* discloses

a method according to claim 1, and *802.3af* further teaches further comprising that a

third pair of the least four pairs of twisted wire carries data to the (APs) (=see page 33-

4, Endpoint PSE, Alternative B, wherein the "Data pair" reads on third pair).

Regarding **claim 10**, the combined teachings of *Piercy* and the *802.3af* discloses

a method according to claim 9, and *802.3af* further teaches further comprising that a

fourth pair of the at least four pairs of twisted wire carries data from the (APs) (=see

page 33-4, Endpoint PSE, Alternative B, wherein the "Data pair" reads on third pair).

Regarding **claim 11,** the combined teachings of *Piercy* and the *802.3af* discloses

a method according to claim 1, and *Piercy* further teaches wherein the network includes

more than one synchronization unit (SU), and wherein the synchronization source

comprises a master (SU) that designates additional (SUs) in the network as slave (SUs)

that receive the synchronization pulses from the master (SU) (=see Fig.2, item 12 reads

on master SU, and Fig.3, item 22, reds on slave SU).

Regarding **claim 12**, *Piercy* discloses a Wireless Medical Telemetry System

(WMTS) synchronizing unit for synchronizing the timing of multiple Access Points of a

WLAN, comprising:

a receiving unit for receiving an external timing signal (=see Fig.3, item 11);

a line receiver having input sockets being adapted for receiving a cable

comprising at least four pairs of wires from a master synchronizing unit when the WMTS

unit has been designated as a slave unit, wherein two pairs of said at least four pairs of

wire contain synchronization pulses from the master synchronizing unit (=see Fig.3,

items 11, wherein the connection locations on the diagram reads on the line receiver

input sockets);

but does not clearly teach: a power module adapted for receiving a rail voltage

from a power hub and for providing predetermined voltage level outputs; a

synchronization source unit for generating synchronization pulses when the WMTS unit

has been a master synchronizing unit; and a plurality of synchronization pulse injection

units for sending synchronization pulses and a rail voltage over a common two pairs of

wires, wherein the synchronization pulses are capacitively coupled to the rail voltage on

the common two pairs of wires.

However, in the same field of endeavor, the *802.3af* does teach: a power module

adapted for receiving a rail voltage from a power hub and for providing predetermined

voltage level outputs (=see page 32, section 33.2.3.1: "…apply a voltage…2.8Vdc");

a synchronization source unit for generating synchronization pulses when the

WMTS unit has been a master synchronizing unit (=see page 30, Fig. 33-4, "Endpoint

PSE, Alternative B"); and

a plurality of synchronization pulse injection units for sending synchronization

pulses and a rail voltage over a common two pairs of wires, wherein the synchronization

pulses are capacitively coupled to the rail voltage on the common two pairs of wires

(=see page 30, Fig. 33-4, Endpoint PSE, Alternative B).

Therefore, it would have been obvious to one of ordinary skill in the art, at the

time of the invention, to combine the teachings of *Piercy* and the *802.3af* to provide

power over Ethernet cable without affecting the data.

Regarding **claim 13**, the combined teachings of *Piercy* and the *802.3af* discloses

an apparatus according to claim 12, and the *802.3af* further teaches wherein the

sockets are adapted to receive RJ-45 connectors connected to Category 5 twisted wire

cable (=see Fig. 33-5).

Regarding **claim 15**, the combined teachings of *Piercy* and the *802.3af* discloses

an apparatus according to claim 12, and *Piercy* further teaching further comprising a

block of output connectors adapted for providing an output of data and synchronization

pulses to one or more slave synchronization units (=see Fig.3, and par.[0014] and

par.[0015]).

Regarding **claim 16**, the combined teachings of *Piercy* and the *802.3af* discloses

an apparatus according to claim 12, and *802.3af* further teaching further comprising a

block of output connectors adapted for providing an output of data, a combination of the

rail voltage and capacitively coupled synchronization pulses to a plurality of Access

Points (=see Fig. 33-4, Endpoint PSE, Alternative B).

Regarding **claim 17**, the combined teachings of *Piercy* and the *802.3af* discloses

an apparatus according to claim 12, and *802.3af* further teaching further comprising a

master/slave selection switch (=see Fig. 33-4, Endpoint PSE, Alternative B).

Regarding **claim 18**, the combined teachings of *Piercy* and the *802.3af* discloses

an apparatus according to claim 12, and *802.3af* further teaching further comprising a

cable delay adjustment unit for compensating a length of cables used (=see page 104,

section 33C.1.12).

Regarding **claim 19**, the combined teachings of *Piercy* and the *802.3af* discloses

an apparatus according to claim 12, and *802.3af* further teaching wherein the

synchronization pulse injection units includes capacitive elements to couple the

synchronization pulses to power cables 4,5, 7,8 that connected to the power rails (=see

page 31, Table 33-1).

Regarding **claim 20**, the combined teachings of *Piercy* and the *802.3af* discloses

an apparatus according to claim 15, and *Piercy* further teaches wherein the output

synchronization pulses comprises at least one of standard frame pulses, multiframe

pulses that are not PSCN (Primary receiver Scan Carrier Number) synchronization

pulses, and multiframe pulses that comprise PSCN synchronization pulses (=see

par.0019], wherein the multiframe pulses are understood).

Regarding **claim 21**, the combined teachings of *Piercy* and the *802.3af* discloses

an apparatus according to claim 16, and *802.3af* further teaches wherein the rail voltage

continues to be output to the Access Points via the connectors after a failure of synchronization pulses occurs (=see page 30, Fig. 33-4).

Regarding **claim 22**, the combined teachings of *Piercy* and the *802.3af* discloses an apparatus according to claim 16, and *802.3af* further teaches wherein the synchronization pulses are output only after a predetermined rail voltage has been detected (=see page 32, section 33.2.3.1: "...2.8Vdc to PI.").

4.   Claims 4, 5, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Piercy* in view of the *802.3af*, and further in view of *Pauli et al* (6,226,515 B1) (hereinafter *Pauli*).

Regarding **claim 4**, the combined teachings of *Piercy* and the *802.3af* discloses a method according to claim 1 operating in a TDMA system, but does not clearly teach: wherein each (AP) communicates with multiple portable wireless devices, and in which portable wireless devices can associate with multiple (APs) in sequence, handing off between them.

However, in the same field of endeavor, *Pauli* does teach: wherein each (AP) communicates with multiple portable wireless devices, and in which portable wireless devices can associate with multiple (APs) in sequence, handing off between them (=see Fig.1, and col.2, lines 35-47).

Therefore, it would have been obvious to anyone of ordinary skill in the art, at the time of the invention, to combine the teachings of *Piercy,* the *802.3af* , and *Pauli* to reduce interference as stated in *Pauli* (=see col.4, lines 43-57).

`   Regarding **claim 5**, the combined teachings of *Piercy, 802.3af*, and *Piercy*

discloses a method according to claim 4, and *Piercy* further teaches wherein said each

(AP) communicates with multiple portable devices in a WMTS (Wireless Medical

Telemetry System) (=see Fig.2, item 11, wherein item 11 reads on WMTS).

   Regarding **claim 14**, the combined teachings of *Piercy* and the *802.3af* discloses

an apparatus according to claim 12, but does not clearly teach: wherein a field

programmable gated array (FPGA), LED driver and a frequency locked loop control

functionality in lieu of a processor or microprocessor.

   However, in the same field of endeavor, *Pauli* does teach: wherein a field

programmable gated array (FPGA), LED driver and a frequency locked loop control

functionality in lieu of a processor or microprocessor (=see Fig.6, wherein the LED is

understood to be contained on the MTa, Fig.8, Fig.9).

   Therefore, it would have been obvious to anyone of ordinary skill in the art, at the

time of the invention, to combine the teachings of *Piercy,* the *802.3af* , and *Pauli* to

reduce interference as stated in *Pauli* (=see col.4, lines 43-57).

Conclusion

5.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

6.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to JOHN B. BYRD JR. whose telephone number is

(571)270-7463. The Examiner can normally be reached on M-F, 7:30am - 5:00pm,

EST.

The supervisor, Charles Appiah, can be reached on 571-272-7904, if you are

unable to resolve the matter with the assigned Examiner. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

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If you would like assistance from a USPTO Customer Service Representative or

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or 571-272-1000.

/JOHN B BYRD JR./
Examiner, Art Unit 2617

/Charles N. Appiah/
Supervisory Patent Examiner, Art Unit 2617